



# National Nutrient Database for Standard Reference

## Release 28 slightly revised May, 2016

### Statistics Report 09003, Apples, raw, with skin [a](#) [b](#)

Report Date: July 01, 2017 12:38 EDT

Nutrient values and weights are for edible portion.

Nutrient	Unit	Value Per 100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
<strong>Proximates</strong>													
Water <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">4</a>	g	85.56	38	0.241	82.39	87.52	3.0	84.775	86.346	4	Analytical or derived from analytical	--	06/2003
Energy	kcal	52	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
Energy	kJ	218	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
Protein <a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	g	0.26	29	0.019	0.17	0.57	3.0	0.209	0.32	3	Analytical or derived from analytical	--	06/2003
Total lipid (fat) <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">4</a>	g	0.17	35	0.011	0.05	0.31	3.0	0.137	0.212	4	Analytical or derived from analytical	--	06/2003
Ash <a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	g	0.19	29	0.018	0.07	0.48	4.0	0.136	0.245	3	Analytical or derived from analytical	--	06/2003
Carbohydrate, by difference	g	13.81	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
Fiber, total dietary <a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	g	2.4	29	0.276	1.4	3.5	4.0	1.584	3.118	3	Analytical or derived from analytical	--	06/2003
Sugars, total <a href="#">2</a> <a href="#">3</a>	g	10.39	25	0.112	8.77	12.01	5.0	10.099	10.68	2	Analytical or derived from analytical	--	06/2003

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Sucrose <a href="#">2</a> <a href="#">3</a>	g	2.07	25	0.049	0.78	3.53	5.0	1.944	2.19	2	Analytical or derived from analytical	--	06/2003
Glucose (dextrose) <a href="#">2</a> <a href="#">3</a>	g	2.43	25	0.031	1.45	3.66	4.0	2.337	2.518	2	Analytical or derived from analytical	--	06/2003
Fructose <a href="#">2</a> <a href="#">3</a>	g	5.90	25	0.059	4.63	6.63	4.0	5.727	6.063	2	Analytical or derived from analytical	--	06/2003
Lactose <a href="#">2</a> <a href="#">3</a>	g	0.00	25	0.000	0	0	--	--	--	2	Analytical or derived from analytical	--	09/2002
Maltose <a href="#">2</a> <a href="#">3</a>	g	0.00	25	0.000	0	0	--	--	--	2	Analytical or derived from analytical	--	09/2002
Galactose <a href="#">2</a> <a href="#">3</a>	g	0.00	25	0.000	0	0	--	--	--	2	Analytical or derived from analytical	--	09/2002
Starch <a href="#">3</a>	g	0.05	10	0.000	0.05	0.05	--	--	--	1	Analytical or derived from analytical	--	09/2002
<b>Minerals</b>													
Calcium, Ca <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">5</a>	mg	6	26	0.340	4	9	5.0	5.039	6.776	4	Analytical or derived from analytical	--	06/2003
Iron, Fe <a href="#">1</a> <a href="#">3</a> <a href="#">5</a>	mg	0.12	16	0.009	0.09	0.18	2.0	0.074	0.173	3	Analytical or derived from analytical	--	06/2003
Magnesium, Mg <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">5</a>	mg	5	26	0.073	4	6	4.0	4.991	5.39	4	Analytical or derived from analytical	--	06/2003

Nutrient	Unit	Value Per 100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Phosphorus, P <a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	mg	11	23	0.337	10	13	3.0	10.124	12.284	3	Analytical or derived from analytical	--	06/2003
Potassium, K <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">5</a>	mg	107	26	2.211	88	136	6.0	101.636	112.293	4	Analytical or derived from analytical	--	06/2003
Sodium, Na <a href="#">1</a> <a href="#">5</a>	mg	1	6	0.071	1	2	1.0	0.363	2.17	2	Analytical or derived from analytical	--	06/2003
Zinc, Zn <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">5</a>	mg	0.04	26	0.004	0.01	0.08	7.0	0.027	0.047	4	Analytical or derived from analytical	--	06/2003
Copper, Cu <a href="#">3</a> <a href="#">5</a>	mg	0.027	13	0.001	0.02	0.04	2.0	0.021	0.034	2	Analytical or derived from analytical	--	06/2003
Manganese, Mn <a href="#">1</a> <a href="#">2</a> <a href="#">3</a> <a href="#">5</a>	mg	0.035	26	0.002	0.03	0.06	4.0	0.03	0.04	4	Analytical or derived from analytical	--	06/2003
Selenium, Se <a href="#">2</a> <a href="#">3</a>	µg	0.0	7	0.000	0	0.1	1.0	0.02	0.022	2	Analytical or derived from analytical	--	06/2003
Fluoride, F <a href="#">2</a>	µg	3.3	1	--	--	--	--	--	--	--	Analytical or derived from analytical	--	04/2006
<b>Vitamins</b>													
Vitamin C, total ascorbic acid <a href="#">1</a>	mg	4.6	3	0.470	4	5.5	2.0	2.543	6.59	1	Analytical or derived from analytical	--	09/2002
Thiamin <a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	mg	0.017	23	0.002	0.01	0.03	4.0	0.011	0.023	3	Analytical or derived from analytical	--	06/2003

Nutrient	Unit	Value Per 100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Riboflavin <a href="#">2</a> <a href="#">3</a>	mg	0.026	20	0.004	0.01	0.05	2.0	0.01	0.042	2	Analytical or derived from analytical	--	06/2003
Niacin <a href="#">1</a> <a href="#">3</a>	mg	0.091	13	0.006	0.07	0.13	1.0	0.01	0.172	2	Analytical or derived from analytical	--	06/2003
Pantothenic acid <a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	mg	0.061	23	0.012	0.03	0.13	3.0	0.022	0.099	3	Analytical or derived from analytical	--	06/2003
Vitamin B-6 <a href="#">1</a> <a href="#">2</a> <a href="#">3</a>	mg	0.041	23	0.001	0.03	0.06	3.0	0.038	0.044	3	Analytical or derived from analytical	--	06/2003
Folate, total	μg	3	23	0.611	--	--	--	--	--	--	Analytical or derived from analytical	--	04/2003
Folic acid	μg	0	--	--	--	--	--	--	--	--	Assumed zero	--	01/2001
Folate, food	μg	3	23	0.611	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Folate, DFE	μg	3	--	--	--	--	--	--	--	--	Calculated or imputed	--	02/2008
Choline, total <a href="#">3</a>	mg	3.4	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	04/2006
Betaine <a href="#">3</a>	mg	0.1	1	--	--	--	--	--	--	--	Analytical or derived from analytical	--	04/2006
Vitamin B-12	μg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	08/1982
Vitamin B-12, added	μg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	09/2004

Nutrient	Unit	Value Per 100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Vitamin A, RAE <sup>2 3</sup>	µg	3	14	0.155	1	7	2.0	1.821	3.62	2	Analytical or derived from analytical	--	06/2003
Retinol	µg	0	--	--	--	--	--	--	--	--	Assumed zero	--	06/2002
Carotene, beta <sup>2 3</sup>	µg	27	14	1.662	11	81	1.0	15.621	39.066	2	Analytical or derived from analytical	--	06/2003
Carotene, alpha <sup>2 3</sup>	µg	0	14	0.000	0	0	--	--	--	2	Analytical or derived from analytical	--	04/2003
Cryptoxanthin, beta <sup>2 3</sup>	µg	11	14	0.926	0	16	2.0	6.208	15.015	2	Analytical or derived from analytical	--	06/2003
Vitamin A, IU <sup>2 3</sup>	IU	54	14	3.108	28	135	2.0	36.424	72.406	2	Analytical or derived from analytical	--	06/2003
Lycopene <sup>2 3</sup>	µg	0	14	0.000	0	0	--	--	--	2	Analytical or derived from analytical	--	04/2003
Lutein + zeaxanthin <sup>2 3</sup>	µg	29	14	1.132	11	73	4.0	26.402	32.551	2	Analytical or derived from analytical	--	06/2003
Vitamin E (alpha-tocopherol) <sup>3 4</sup>	mg	0.18	10	--	0.08	0.38	--	--	--	2	Analytical or derived from analytical	--	06/2003
Vitamin E, added	mg	0.00	--	--	--	--	--	--	--	--	Assumed zero	--	09/2004
Tocopherol, beta <sup>3 4</sup>	mg	0.00	10	--	0	0	--	--	--	2	Analytical or derived from analytical	--	06/2003

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Tocopherol, gamma <a href="#">3</a> <a href="#">4</a>	mg	0.00	10	--	0	0	--	--	--	2	Analytical or derived from analytical		-- 06/2003
Tocopherol, delta <a href="#">3</a> <a href="#">4</a>	mg	0.00	10	--	0	0	--	--	--	2	Analytical or derived from analytical		-- 06/2003
Vitamin D (D2 + D3)	µg	0.0	--	--	--	--	--	--	--	--	Assumed zero		-- 11/2008
Vitamin D	IU	0	--	--	--	--	--	--	--	--	Assumed zero		-- 02/2009
Vitamin K (phylloquinone) <a href="#">2</a> <a href="#">3</a>	µg	2.2	20	0.079	0.9	4.3	4.0	1.97	2.431	2	Analytical or derived from analytical		-- 06/2003
<b>Lipids</b>													
Fatty acids, total saturated	g	0.028	--	--	--	--	--	--	--	--	Calculated or imputed		-- 05/2007
4:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical		-- 05/2007
6:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical		-- 05/2007
8:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical		-- 05/2007
10:0	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical		-- 05/2007
12:0	g	0.000	1	--	--	--	--	--	--	--	Analytical or derived from analytical		-- 05/2007

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
14:0	g	0.001	1	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
16:0	g	0.024	4	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
18:0	g	0.003	4	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Fatty acids, total monounsaturated	g	0.007	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
16:1 undifferentiated	g	0.000	1	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
18:1 undifferentiated	g	0.007	4	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
20:1	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
22:1 undifferentiated	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Fatty acids, total polyunsaturated	g	0.051	--	--	--	--	--	--	--	--	Calculated or imputed	--	05/2007
18:2 undifferentiated	g	0.043	4	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
18:3 undifferentiated	g	0.009	4	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007

Nutrient	Unit	Value Per 100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
18:4	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
20:4 undifferentiated	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
20:5 n-3 (EPA)	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
22:5 n-3 (DPA)	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
22:6 n-3 (DHA)	g	0.000	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	05/2007
Fatty acids, total trans	g	0.000	--	--	--	--	--	--	--	--	Assumed zero	--	06/2015
Cholesterol	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	08/1982
Phytosterols	mg	12	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	08/1982
<b>Amino Acids</b>													
Tryptophan <sup>3</sup>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Threonine <sup>3</sup>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Isoleucine <sup>3</sup>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Leucine <sup>3</sup>	g	0.013	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Lysine <sup>3</sup>	g	0.012	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Methionine <sup>3</sup>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Cystine <sup>3</sup>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Phenylalanine <sup>3</sup>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Tyrosine <sup>3</sup>	g	0.001	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Valine <sup>3</sup>	g	0.012	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Arginine <sup>3</sup>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Histidine <sup>3</sup>	g	0.005	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Alanine <sup>3</sup>	g	0.011	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002

Nutrient	Unit	Value Per100 g	Data Points	Std. Error	Min	Max	df	LB	UB	# Studies	Source	NDB Ref	Last Modified
Aspartic acid <sup>3</sup>	g	0.070	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Glutamic acid <sup>3</sup>	g	0.025	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Glycine <sup>3</sup>	g	0.009	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Proline <sup>3</sup>	g	0.006	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
Serine <sup>3</sup>	g	0.010	--	--	--	--	--	--	--	--	Analytical or derived from analytical	--	09/2002
<b>Other</b>													
Alcohol, ethyl	g	0.0	--	--	--	--	--	--	--	--	Assumed zero	--	04/1985
Caffeine	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	01/2001
Theobromine	mg	0	--	--	--	--	--	--	--	--	Assumed zero	--	01/2001
<b>Flavonoids</b>													
Anthocyanidins													
Cyanidin <sup>15 16 17 18 19 20 21</sup>	mg	1.57	95	0.28	0	15.42	--	--	--	--	--	--	--
Petunidin <sup>17</sup>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Delphinidin <sup>16 17</sup>	mg	0.0	--	0	0	0.02	--	--	--	--	--	--	--
Malvidin <sup>17</sup>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Pelargonidin <sup>16 17</sup>	mg	0.0	--	0	0	0.02	--	--	--	--	--	--	--
Peonidin <sup>17 21</sup>	mg	0.0	--	0.01	0	0.28	--	--	--	--	--	--	--
Flavan-3-ols													
(+)-Catechin <sup>15 17 18 20 22 23 24 25</sup>	mg	1.3	140	0.07	0	5.1	--	--	--	--	--	--	--
(-)-Epigallocatechin <sup>17 22 23</sup>	mg	0.3	59	0.07	0	2.51	--	--	--	--	--	--	--
(-)-Epicatechin <sup>15 17 18 19 20 22 23 24 25 26</sup>	mg	7.5	150	0.44	0.8	19.16	--	--	--	--	--	--	--
(-)-Epicatechin 3-gallate <sup>17 22 23</sup>	mg	0.0	59	0	0	0.19	--	--	--	--	--	--	--

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(-)Epigallocatechin 3-gallate <a href="#">17</a> <a href="#">22</a> <a href="#">23</a>	mg	0.2	59	0.11	0	6.26	--	--	--	--	--	--	--
(+)-Gallocatechin <a href="#">17</a> <a href="#">22</a> <a href="#">23</a>	mg	0.0	59	0	0	0	--	--	--	--	--	--	--
Flavanones													
Hesperetin <a href="#">17</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Naringenin <a href="#">17</a>	mg	0.0	--	0	0	0	--	--	--	--	--	--	--
Flavones													
Apigenin <a href="#">16</a> <a href="#">17</a> <a href="#">27</a> <a href="#">28</a> <a href="#">29</a> <a href="#">30</a>	mg	0.0	51	0	0	0.01	--	--	--	--	--	--	--
Luteolin <a href="#">16</a> <a href="#">17</a> <a href="#">27</a> <a href="#">28</a> <a href="#">29</a> <a href="#">30</a> <a href="#">31</a>	mg	0.1	--	0.08	0	2.7	--	--	--	--	--	--	--
Flavonols													
Kaempferol <a href="#">16</a> <a href="#">24</a> <a href="#">27</a> <a href="#">28</a> <a href="#">29</a> <a href="#">30</a> <a href="#">31</a> <a href="#">32</a> <a href="#">33</a>	mg	0.1	--	0.07	0	2.67	--	--	--	--	--	--	--
Myricetin <a href="#">16</a> <a href="#">17</a> <a href="#">27</a> <a href="#">28</a> <a href="#">29</a> <a href="#">30</a> <a href="#">31</a> <a href="#">32</a>	mg	0.0	53	0	0	0.03	--	--	--	--	--	--	--
Quercetin <a href="#">15</a> <a href="#">16</a> <a href="#">17</a> <a href="#">18</a> <a href="#">19</a> <a href="#">20</a> <a href="#">24</a> <a href="#">26</a> <a href="#">27</a> <a href="#">28</a> <a href="#">29</a> <a href="#">30</a> <a href="#">31</a> <a href="#">32</a> <a href="#">33</a> <a href="#">34</a>	mg	4.0	139	0.12	0	11.47	--	--	--	--	--	--	--
Isoflavones													
Daidzein <a href="#">35</a> <a href="#">36</a> <a href="#">37</a>	mg	0.00	--	0	0	0	--	--	--	--	--	--	--
Genistein <a href="#">35</a> <a href="#">36</a> <a href="#">37</a>	mg	0.00	--	0	0	0	--	--	--	--	--	--	--
Glycitein <a href="#">37</a>	mg	0.00	--	--	0	0	--	--	--	--	--	--	--
Total isoflavones <a href="#">35</a> <a href="#">36</a> <a href="#">37</a>	mg	0.00	--	0	0	0	--	--	--	--	--	--	--
Formononetin	mg	0.00	--	--	0	0	--	--	--	--	--	--	--
Coumestrol	mg	0.00	--	--	0	0	--	--	--	--	--	--	--
Proanthocyanidin													
Proanthocyanidin dimers <a href="#">6</a> <a href="#">7</a> <a href="#">8</a> <a href="#">9</a> <a href="#">10</a> <a href="#">11</a> <a href="#">12</a> <a href="#">13</a> <a href="#">14</a>	mg	13.2	185	13.06	1.02	105.81	--	--	--	--	--	--	--
Proanthocyanidin trimers <a href="#">8</a> <a href="#">9</a> <a href="#">10</a>	mg	8.0	--	3.18	2.88	23.2	--	--	--	--	--	--	--
Proanthocyanidin 4-6mers <a href="#">9</a> <a href="#">10</a>	mg	24.7	--	7.94	11.6	49.5	--	--	--	--	--	--	--
Proanthocyanidin 7-10mers <a href="#">9</a> <a href="#">10</a>	mg	19.2	--	7.49	4.3	39.26	--	--	--	--	--	--	--
Proanthocyanidin polymers (>10mers) <a href="#">9</a> <a href="#">10</a>	mg	28.8	--	13.27	5.2	59.93	--	--	--	--	--	--	--

Sources of Data

<sup>1</sup>Produce Marketing Association (PMA) Nutrient Content of Apple, 1990

<sup>2</sup>Nutrient Data Laboratory, ARS, USDA National Food and Nutrient Analysis Program Wave 5j, 2001 Beltsville MD

<sup>3</sup>Nutrient Data Laboratory, ARS, USDA National Food and Nutrient Analysis Program Wave 5b, 2000 Beltsville MD

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**Footnotes**

<sup>a</sup> Based on analytical data for red delicious, golden delicious, gala, granny smith, and fuji varieties.

<sup>b</sup> 3 and 5 pound bags of apples typically contain small and extra small sizes.